

WE CLAIM:

1. A refrigerator in which a deodorizer is provided in a cold air circulation path for deodorizing an atmosphere in the refrigerator, the deodorizer comprising discharging means for producing ozone and ultraviolet rays by means of high-voltage discharge and a photocatalyst module for decomposing an odor component and injurious matter contained in the atmosphere by means of photocatalyst.

2. A refrigerator according to claim 1, wherein the deodorizer further comprises ozone decomposing means for decomposing the ozone produced by the discharging means, the ozone decomposing means being disposed at a downstream side of at least the discharging means and the photocatalyst module with respect to a direction in which the cold air flows.

3. A refrigerator according to claim 2, further comprising a heat exchanger having a cold air inlet, wherein the ozone decomposing means is disposed in the cold air inlet of the heat exchanger.

4. A refrigerator according to claim 1, wherein two photocatalyst modules are disposed at upstream and downstream sides of the discharging means with respect to a direction in which the cold air flows, respectively.

5. A refrigerator according to claim 1, wherein the

deodorizer includes a body and the photocatalyst module is attached to and detached from the body of the deodorizer.

6. A refrigerator according to claim 5, wherein the
5 photocatalyst module has a first side confronting the discharging means and a second side located opposite the first side, and the first and second sides of the photocatalyst module are replaced each with the other when the photocatalyst module is attached to the body of the deodorizer.

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7. A refrigerator according to claim 1, wherein the photocatalyst module includes a base made from a porous ceramic and a photocatalytic material fixed to a surface of the base.

8. A refrigerator according to claim 1, further comprising
15 control means for controlling the deodorizer so that the discharging means discharges electricity when cold air is circulated in the refrigerator.

9. A refrigerator according to claim 1, wherein the
20 deodorizer includes a fan for blowing against the discharging means and the photocatalyst module.

10. A refrigerator according to claim 1, wherein the
25 deodorizer includes a body, and the discharging means includes two electrodes between which electric discharge is directly performed and is attached to and detached from the body of the deodorizer.

11. A refrigerator according to claim 1, wherein the discharging means includes a pair of electrodes across which a high voltage of a negative polarity is applied so that electric discharge is performed.

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12. A refrigerator according to claim 1, further comprising voltage changing means for changing a discharge voltage of the discharging means.

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13. A refrigerator according to claim 1, further comprising a door closing and opening an interior of the refrigerator and control means for controlling the deodorizer so that the discharging means interrupts electric discharge when the door is opened.

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14. A refrigerator according to claim 1, wherein the discharging means includes a pair of electrodes and the photocatalyst module is disposed between the electrodes of the discharging means.

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15. A refrigerator according to claim 1, further comprising a refrigerator body, wherein the deodorizer is attached to and detached from the refrigerator body.

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16. A refrigerator according to claim 15, wherein at least the discharging means of the deodorizer is powered by a battery.

17. A deodorizer which is detachably attached to a body of

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a refrigerator so as to be located in a cold air circulation path for deodorizing an atmosphere in the refrigerator, the deodorizer comprising discharging means for producing ozone and ultraviolet rays by means of high-voltage discharge and a
5 photocatalyst module for decomposing an odor component and injurious matter contained in the atmosphere by means of photocatalyst.

18. A deodorizer according to claim 17, wherein at least
10 the discharging means is powered by a battery.

19. A deodorizer comprising:
a blowing fan;
discharging means for producing ozone and ultraviolet rays
15 by means of high-voltage discharge, the discharging means being disposed in a blowing path through which air is caused to flow by the blowing fan;

a photocatalyst module provided in the blowing path for decomposing an odor component and injurious matter contained in
20 the atmosphere by means of photocatalyst; and

ozone decomposing means provided in the blowing path for decomposing the ozone produced by the discharging means.

20. A deodorizer according to claim 19, which further
25 comprises a body and wherein the discharging means is attached to and detached from the body.

21. A deodorizer according to claim 19, wherein the

discharging means includes two electrodes between which electric discharge is directly performed.

22. A deodorizer according to claim 19, wherein the
5 discharging means includes a pair of electrodes across which a high voltage of a negative polarity is applied so that electric discharge is performed.

23. A deodorizer according to claim 19, wherein voltage
10 applied to the discharging means is changed according to an amount of air supplied by the blowing fan.

24. A deodorizer according to claim 19, wherein the
discharging means includes a pair of electrodes and the
15 photocatalyst module is disposed between the electrodes of the discharging means.

25. A deodorizer according to claim 19, wherein two
photocatalyst modules are disposed at upstream and downstream
20 sides of the discharging means in the blowing path respectively.

26. A deodorizer according to claim 19, which further
comprises a body and wherein the photocatalyst module is attached
to and detached from the body.

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27. A deodorizer according to claim 26, wherein the
photocatalyst module has a first side confronting the
discharging means and a second side located opposite the first

side, and the first and second sides of the photocatalyst module are replaced each with the other when the photocatalyst module is attached to the body of the deodorizer.

- 5 28. A deodorizer according to claim 19, wherein the photocatalyst module includes a base made from a porous ceramic and a photocatalytic material fixed to a surface of the base.